

CLAIMS

1. A pharmaceutical composition, said composition comprising a therapeutically effective amount of a compound of the formula R-COOH, or a salt or an ester or amide of such compound, where R designates a saturated or unsaturated alkyl chain of 10-24 carbon atoms, one or more of which may be replaced by heteroatoms, where one or more of said carbon or heteroatom chain members optionally forms part of a ring, and where said chain is optionally substituted by a hydrocarbyl radical, heterocyclyl radical, lower alkoxy, hydroxyl-substituted lower alkyl, hydroxyl, carboxyl, halogen, phenyl or (hydroxy-, lower alkyl-, lower alkoxy-, lower alkenyl- or lower alkinyl)-substituted phenyl, C<sub>3</sub>-C<sub>7</sub> cycloalkyl or (hydroxy-, lower alkyl-, lower alkoxy-, lower alkenyl- or lower alkinyl)-substituted C<sub>3</sub>-C<sub>7</sub> cycloalkyl wherein said compound is capable of being endogenously converted to its respective coenzyme A thioester, RCOSCoA.
2. A composition according to claim 1, wherein R is selected from the group consisting of  $\omega$ -carboxyl,  $\omega$ -hydroxyl boron, and  $\omega$ -hydroxyl chains.
3. A composition according to claim 1, where RCOOH is either clofibrac acid or fibrac acid, or a salt, ester, amide, or derivative thereof.
4. A composition according to claim 1, where RCOOH is a nonsteroidal antiinflammatory drug (NSAID).

5. A composition according to claim 1, where RCOOH is a saturated or unsaturated long chain fatty acid.

5 6. A composition according to claim 5, where the fatty acid is chosen from:

- Stearic(18:0) acid
- Oleic(18:1) acid
- Linolenic(18:2) acid
- Linolenic(18:3) acid
- 10 Eicosapentaenic(20:5) acid
- Docosahexaenic(22:6) acid

7. A composition according to claim 1, wherein RCOOH is selected from the group consisting of:

15 1,16 Hexadecanedioic acid

1,18 Octadecanedioic acid

2,2,15,15-tetramethyl-hexadecane-1,16-dioic acid

2,2,17,17-tetramethyl-octadecane-1,18-dioic acid

3,3,14,14-tetramethyl-hexadecane-1,16-dioic acid

20 3,3,16,16-tetramethyl-octadecane-1,18-dioic acid

4,4,13,13-tetramethyl-hexadecane-1,16-dioic acid and

4,4,15,15-tetramethyl-octadecane-1,18-dioic acid

8. A composition according to claim 1, wherein RCOOH is selected from the group consisting of:

25 16-B(OH)2-hexadecanoic acid

18- B(OH)2-octadecanoic acid

16- B(OH)2-2,2-dimethyl-hexadecanoic acid

18- B(OH)2-2,2-dimethyl-octadecanoic acid  
16- B(OH)2-3,3-dimethyl-hexadecanoic acid  
18- B(OH)2-3,3-dimethyl-octadecanoic acid  
16- B(OH)2-4,4-dimethyl-hexadecanoic acid  
5 18- B(OH)2-4,4-dimethyl-octadecanoic acid

9. A composition according to claim 1, wherein RCOOH is selected from the group consisting of:

16-hydroxy-hexadecanoic acid  
10 18-hydroxy-octadecanoic acid  
16-hydroxy-2,2-dimethyl-hexadecanoic acid  
18-hydroxy-2,2-dimethyl-octadecanoic acid  
16-hydroxy-3,3-dimethyl-hexadecanoic acid  
18-hydroxy-3,3-dimethyl-octadecanoic acid  
15 16-hydroxy-4,4-dimethyl-hexadecanoic acid  
18-hydroxy-4,4-dimethyl-octadecanoic acid

10. A method of treating an HNF-4 mediated disease state which method comprises administering a therapeutically effective amount of a compound which  
20 inhibits HNF-4 controlled transcription.

11. A method of claim 10 wherein said compound comprises an amphipathic carboxylate capable of being converted to its respective CoA thioester.

25 12. A method of claim 11 wherein said amphipathic carboxylate is a xenobiotic amphipathic carboxylate.

13. A method of claim 10 wherein said compound shifts the HNF-4 dimer-oligomer equilibrium to favor an oligomer.
- 5 14. A method of claim 10 wherein said compound decreases the binding affinity of the HNF-4 dimer for a target gene.
- 10 15. A method of claim 11 wherein said amphipathic carboxylate is a C18:3 fatty acid.
16. A method of claim 11 wherein said amphipathic carboxylate is a C20:5 fatty acid.
17. A method of claim 10 for the treatment of Syndrome X.
- 15 18. A method of claim 10 for the treatment of coronary or peripheral atherosclerosis.
19. A method of claim 10 for the treatment of rheumatoid arthritis, multiple sclerosis, psoriasis or inflammatory bowel diseases.
- 20 20. A method of claim 10 for the treatment of breast cancer, colon cancer or prostate cancer.

21. A method of modulating HNF-4 transcriptional activity in vivo comprising exposing the HNF-4 or a nucleic acid encoding HNF-4 to an effective amount of an amphipathic carboxylate, an antisense molecule, a ribozyme, or an antibody for HNF-4 or its gene.
- 5 22. A method of claim 21 wherein said amphipathic carboxylate is a fatty acid capable of being converted to its respective CoA thioester.
23. A method of claim 21 wherein said modulation is inhibition of HNF-4 activity.
- 10 24. A method of claim 21 wherein said modulation is activation of HNF-4 activity.
25. A method of claim 21 wherein said amphipathic carboxylate is a C18:3 fatty acid.
- 15 26. A method of claim 21 wherein said amphipathic carboxylate is a C20:5 fatty acid.
27. A method of claim 21 wherein the modulation is via antibody interaction.
28. A method of claim 10 wherein said compound is an antisense molecule, a ribozyme, or an antibody to HNF-4.